

CHAPTER TWO  
PRODUCTION SITES

Pollard has identified a ceramic style zone which embraces a strip of southern Essex as well as the northern half of Kent for the period in question (1982a, 252). This zone is principally one of ceramic use. Within it can be identified at least four smaller areas which possess distinct individuality in their ceramic production, although each has degree of overlap with the next.

Upchurch.

The name is retained for historical reasons and embraces all pottery production in and around the Medway estuary.

Thameside Kent.

All pottery manufacturing sites north of the ridge of the Hoo peninsula and east of Gravesend. It includes the marshland along the Kentish side of the Thames and its hinterland.

West Kent.

The remainder of north Kent, west of Gravesend on the Thames, West of Watling Street on the Medway. It embraces an apparently structureless pattern of largely unrelated kilns. Those sites which are not adequately published already yield too little evidence for detailed research.

Thameside Essex.

The narrow riverside strip running from Thurrock to Wakering. This area is only considered in passing as the bulk of available material is already being processed by others.

Upchurch and Thameside Kent form the major areas of study. Collectively they are referred to as 'north Kent'. The term 'Thameside' is used on its own to signify the production in Thameside Kent plus that in a similar tradition taking place in Thameside Essex. The term 'Essex' refers to styles being produced in traditions peculiar to the northern bank of the Thames. One could further sub-divide the above zones, but this would not be realistic given the current level of knowledge.

Kiln location

The Upchurch and Thameside kilns share common factors which determine their location. To those listed below could be added the need to remain close to other activities in which the potters may also be engaged, be that salt-boiling, farming or fishing,

- i) A source of workable clay within a short distance.
- ii) An adjacent source of water.
- iii) A local source of temper, either sand, shell or flint.
- iv) Close to high ground providing timber for fuel.
- v) Close proximity to higher, dry ground for habitation.
- vi) Easy access to tidal creeks for the transport of goods.
- vii) A local demand for their products.

## UPCHURCH

The information about the archaeology of the Upchurch marshes presented in this work owes much to conversations with Ian Jackson and to fieldwork with the Upchurch Archaeological Research Group. The Upchurch marshes are specifically only those directly north of the village itself. As the term has historically been applied loosely to the whole of the salt marsh within the Medway estuary, this work will also follow that practice (fig. 6),

Most kilns excavated in the region have been published to some extent. All kiln plans that could be found have been redrawn to a constant scale on the following pages. Plans do not exist of several kilns, so a representation has been drawn based on photographs and textural descriptions, for comparative purposes. The semi-sunken kiln employed on the Upchurch marshes (Swan 1984, 55) is thought to be a 'Belgic' introduction in the immediate pre-conquest period. The kilns are generally small, roughly circular and with a temporary superstructure, perhaps of turves or clay slabs (Jackson 1972, 288).

Roman occupation on the marshes took place at 0 to +2m OD. As the sea has risen above this level, the salt marsh had also grown to cover the sites until human action disturbed the balance of the natural system. The sites not obliterated by cement workers are being progressively exposed and destroyed by the tides and the weather. When noticed at the right time, the erosion may be monitored and the site plotted by repeated visits between tides: the process is slow but a site may last several years once exposed. Unfortunately the erosion of a site may also be noticed by the less enlightened; the marshes have suffered as a result of their own reputation from widespread pillaging by treasure hunters.

Antiquarian accounts of discoveries at Upchurch are selective and confusing. Charles Roach-Smith, George Payne and members of the Woodruff family all made observations as the cement companies destroyed the marshland. Their collections are the most extensive assemblages of complete vessels available and so form the basis of the typology for Upchurch fine wares. They are discussed more fully in Appendices I and II. Reports of extensive layers of black pottery, ash, kiln waste (VCH Kent, 132) and numerous kilns are not reinforced by modern inspections of the sites. Only three substantially complete kilns have been found during twenty years of investigations by Ian Jackson, plus a further one discovered by the Lower Medway Archaeological Group. Systematic surveys of the surviving marshland produce scatters of kiln bars, a few wasters and the occasional preformed pedestal. There is substantial evidence for occupation sites, salting sites and burials, but precious little for the existence of a supposedly extensive pottery industry.

The archaeology of the marshes is complex. Although nominally covered by one metre of alluvium, the sites have been affected by innumerable changes in the courses of creeks and river channels. The modern surface is therefore uneven whilst the Britons also would have worked on a surface intersected by creeks and depressions covering silted

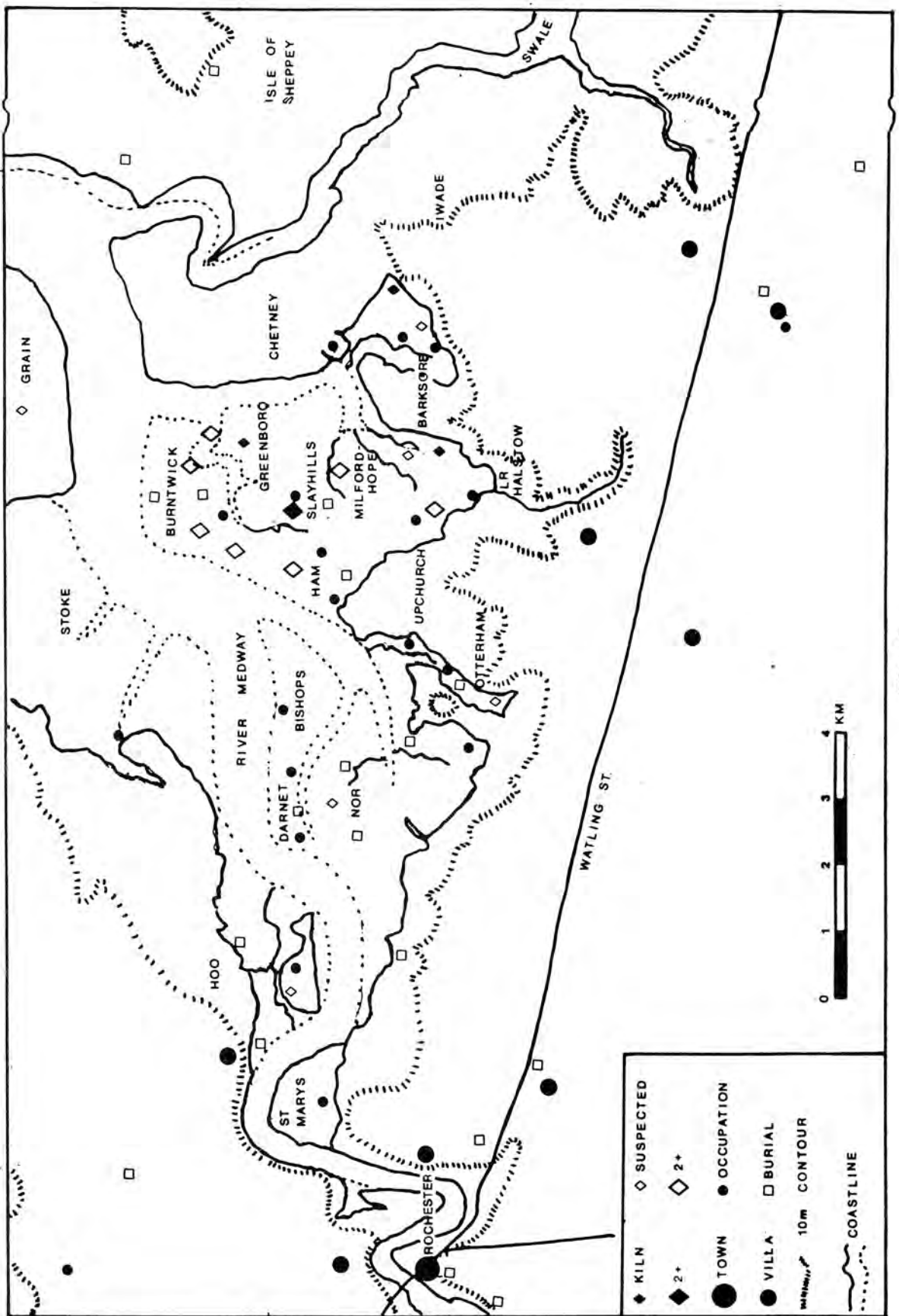


Fig. 6

channels, built up in places by the debris of their own activities. There is therefore no such thing as a Roman 'level' on the marshes. The undulations of peat lines can however be used to estimate the level of the ancient surfaces on a restricted local basis.

Excavation in the conventional sense is very difficult away from the shoreline, and then is limited to a few hours between tides. Investigations are limited still further by the time taken to reach the more inaccessible parts of the marshes and by the restricted amount of equipment that can be carried. The Upchurch group find suitable tidal conditions for investigations on some thirty days per year, with perhaps four hours useful working time on each occasion. The summer months see the growth of seaweed, the accretion of silt and a surfeit of tourists on the river, all of which impede archaeological progress.

Most of the "excavation" is therefore selective erosion by tidal action. It cleans out the softer archaeological deposits in ditches and pits in preference to the slightly harder clay. Where a firm archaeological surface such as a hearth is exposed, the water tends first to scour it clean of mud then to cut the clay away from around the feature, leaving it standing proud. Creeks may also cut directly into an ancient deposit, neatly sectioning it. The sites are not exposed to a predictable routine, although areas where a spate of more active erosion is under way can be identified and kept under observation.

Often it is not for the first time that such features are being exposed. A creek could cut through a kiln site, wash out the pottery then quietly silt up again. The resulting linear feature in the marsh - full of potsherds - would then resemble a well-stratified ditch. Some convincing sites are the dumps left behind by previous generations of pot hunters. The rubbish of twenty centuries has been dumped, buried, eroded out, mixed together, transported some distance and then been reburied on the marshes. The manner in which sites are exposed makes individual interpretation difficult. Even if proved not to be a secondary deposit, single features such as ditches and pits are almost meaningless in isolation from the rest of the site they had been associated with. It is for this reason that blocks of marshland are considered below, rather than individual sites. Only over a long period of time will the pattern of occupation on the marshes be pieced together, and will always remain far from complete. Only the pottery itself points to the existence of an industry of some size at Upchurch.

The outer marshes - Burntwick, Slayhills, Greenborough, Milfordhope and Barksore - are the Upchurch marshes proper. These have been the most productive of potential kiln sites; three confirmed plus two dozen suspected (Swan 1984, 409-421) have been located within this area. Slayhills "kiln 1" (Jackson 1962) had a chamber built in a pit 0.3 metres deep, with a firing trench tunnelled through marsh clay (fig 7.1). The kiln possessed an internal ledge to support kiln bars, which were however missing. Slayhills 'kiln 4' was a more complete example of the type (Swan 1984, fig IX). It had a set of firebars of diverse shapes as its floor, again supported by two rectangular pedestals and a ledge inside the kiln wall (fig 7.2). Barksore 'kiln 3' (Jackson 1972) had a firing chamber and

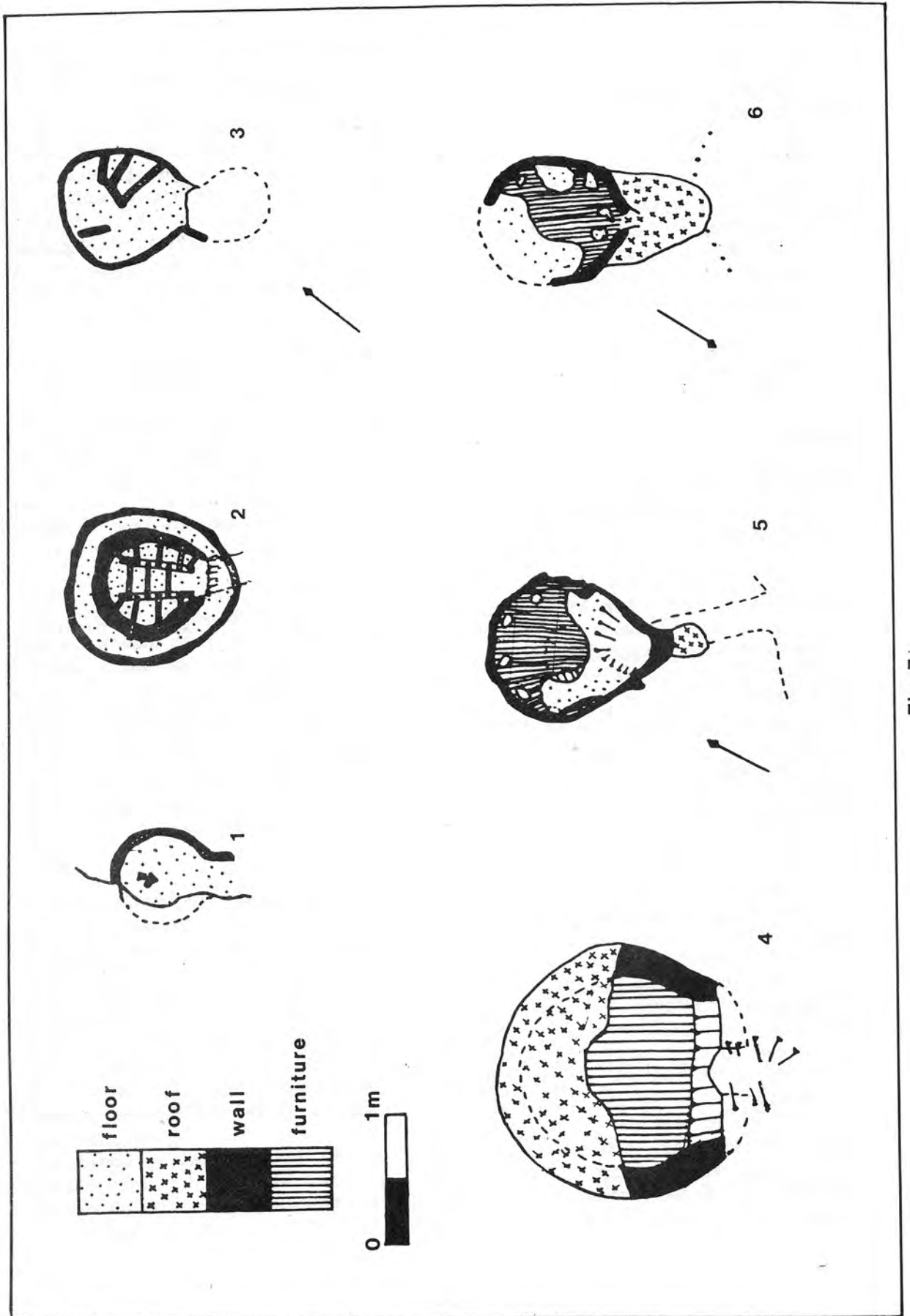


Fig. 7

fire tunnel similar in dimension and construction to 'kiln 1'. The oven floor was constructed of a variety of firebars, supported by two rectangular preformed pedestals (fig 7.3). They continue to yield pieces of pedestal, spreads of kiln bars, ashen layers and wasters. Remains of three kilns presumed excavated and backfilled by the early antiquaries have recently been re-exposed (Jackson 1984). 1984 saw a local junk shop selling the contents of a Slayhills waster pit of the mid-first century. In general the sites are protected from such pillaging by their relative inaccessibility, Burntwick can only be reached by boat whilst Milfordhope is becoming increasingly difficult to reach on foot. A German bomb cut the causeway to Slayhills and a creek is now slowly expanding the breach, progressively making access awkward.

There was prehistoric but no Middle Iron Age occupation on the marshes, possibly due to a high sea level. Occupation appears to have restarted around the beginning of the first century AD, and lasted at least until the end of the second. This span depends very much on the dating of local pottery which introduces circular arguments when attempting to determine the date of the end of the industry. Two coin hoards from Slayhills are late second century (Gray, 1951). Distinctive late Roman pottery is noticeably absent and probably confirms a general rise in water level in the late second or early third century.

There is strong evidence for the pre-conquest manufacture of flint-tempered pottery. Two kilns excavated by Jackson were of the later first century. They produced partially Romanised pottery in both handmade and wheelmade sandy fabrics. The third kiln was late first or early second century in date and produced low quality sand-tempered pottery. Wasters are known dating to the second century, but not in the allegedly typical fine wares. This was one of the reasons behind the 1982 neutron activation analysis programme (Monaghan 1982b). The pale flagon fabric N4/1s found on the western marshes is rare, even as a stray find, on the outer marshes. Many of the earlier pottery producing sites appear associated with salt-boiling briquetage and several of the earlier reports of kilns may have confused the two activities.

The sites close inshore were probably those most frequently visited by the antiquarians. This in part explains the marked difference in the type of vessels they recovered and those found by the Upchurch group on the outer marshes. Some inshore sites seem later in date than those to seaward, indicating perhaps that the potters moved inland to more hospitable locations in the face of a rising high tide level. Extensive graveyards around Otterham Creek and Bayford Marsh may have been the chief source of pots in the collection of the Reverend John Woodruff, vicar of Upchurch in the mid-nineteenth century (Monaghan 1983, 200). Wasters in his collection probably came from kilns in the locality, but several appear to have found use as grave goods or cinerary urns. This is perhaps the only function they could effectively fulfil and they certainly could not have been traded any distance. Nothing now remains to test these assumptions: Hume checked these sites during the 1950's and the Upchurch group with the present writer did so again in 1983, all with no result.

It is known that an extensive area of marsh at the head of Otterham Creek once known as Ham Marsh and King's Marsh has been lost in recent times. The Ham Ooze, as it is now, contains a few marshy humps, but the area was certainly more promising when Hume visited sites in that area. Slightly more inshore is Ham Green, where Ian Jackson finds noticeably later pottery than on the outer sites. The inshore sites have suffered most heavily from all forms of marshland destruction and so it is the later sites about which we have the least information. Some later forms of pottery vessels are completely unknown outside the antiquarian collections. It is for this reason that the origins of the industry are much easier to trace than its demise.

The western marshes are outside the traditional area of pottery find spots and few claims to kiln discoveries have been made (Spurrell 1885, 279). Nor Marsh is now only barely accessible on foot whilst to visit either Bishop's Marsh or Darnet Island involves beaching a boat at high tide. Recent investigations have produced two points of note. First, there is a marked incidence of the pale flagon fabric N4/1s on the more westerly sites. Second, a foreshore secondary deposit off Darnet Island yielded the only poppyhead beaker waster known to have been recovered in modern times.

Hoo Island featured one of the few Roman sites known on marshes along the Medway's northern bank. That reported by Blumstein (1956) appears to have been a specialist flagon manufacturing site of the Claudio-Neronian period. A small amount of kiln debris was reported and the flagons in N4/1s include several which are discoloured or substandard. It also yielded an unquantified number of standard Upchurch forms. Most were unfortunately not collected but, of those which were, some are in the same oxidised fabric as the flagons. Nothing now remains of the site, which may have been a secondary deposit and its precise location is in doubt (T. Beswick pers. com.). Hoo is best regarded as part of general Upchurch production as the location of kilns producing later forms in the same fabric is uncertain.

The extensive tract of marshland between Hoo and Grain has been remarkably unproductive of Roman material. The bulk of the marsh has been destroyed in this area and that which remains is virtually inaccessible. An unknown quantity of material was disturbed during the excavation of Damhead Creek, which serves Kingsnorth power station but investigations during 1984 revealed no remaining evidence. An oil pipeline trench on the Isle of Grain revealed a suspected kiln in 1948 (Evans 1949, xlv) but both mediaeval and Roman pottery were present on the site and it is uncertain which, if either, was produced there. Extensive recent work in the area by the Kent Rescue Unit has apparently discovered nothing to add to this picture. Although Roman sites are known on the marshland up-river of Hoo Island, at both Temple Marsh and St. Mary's Island, no evidence of pottery manufacture has come to light.

Beyond the arc of operations of the Upchurch group lie several more kiln sites. A kiln (not illustrated) was excavated from a marsh bank at Bedlams Bottom, Iwade (Ocock 1966). It was semi-sunken with a clay floor, with firebars supported on an internal ledge. The pedestal in this case

was formed of clay plastered on an Inverted beaker of form 214. The short flue had become exposed at some time during its life and had been roofed with firebars. Hoo wasters were found. Further sites are reported around Funton Creek (Spurrell 1885, 279) and Chetney Hill (Payne 1893, 72). The remains of a probable tile kiln were observed by the present author in 1984. Nothing of note has been reported from the more northerly parts of Chetney marsh, but erosion has been limited in that area.

It is 10km from Hoo Island to Chetney Marshes and 4km from the shoreline at Upchurch to the outermost sites on Burntwick Island. In extent, the Upchurch industry covers a similar area to the Thameside potteries. Due to the piecemeal nature of the evidence, it has not proved possible to sub-divide the Upchurch marshes into more than one production zone as has been done with the Thameside marshes. It was necessary to perform a neutron activation analysis programme (Monaghan 1982b) in order to tie stray finds to local production. Despite this, examples of many vessel types that were previously common could not be found to analyse. In the absence of significant numbers of kilns and waste dumps, Upchurch production must largely be studied with reference to the pottery alone.

#### THAMESIDE KENT

The discovery of Roman sites along the Thameside strip of north Kent has been largely due to chance. The coincidence of field drains, cement pits and utilities trenches with archaeological features suggests there has been a very high level of survival of Roman sites in the area (fig. 8). It also indicates that present archaeological evidence is akin to the tip of an iceberg: in all probability there is a complete Roman landscape some one or two metres below the marsh surface. The marshes have not been ploughed or even drained on an extensive scale. The gradual accretion of flood deposits has sealed the Roman sites and unlike at Upchurch there has not been substantial erosion. The known distribution of kiln sites is therefore directly proportional to modern disturbance when the archaeologically-aware were close at hand. Perhaps the absence of sites on the Isle of Grain until very recently has been due to the absence of a local field worker. The known sites do not answer all the pertinent questions. Most were inadequately excavated or remain unpublished and it is clear that parts of the developmental history of the industry are missing. It is only a matter of time before further kilns are discovered and it is hoped that they will fit into the known gaps in our knowledge.

Some 25 kilns have been observed in the area, plus nine suspected ones (Swan 1984, 393-408). This is hardly an adequate number for the two centuries of known production. They are spread over some 12km which compares with 15km for the Oxford industry, 5km for the Hew Forest potteries and 10km for the Alice Holt/Farnham complex. The intended location for the production sites seems to have been on or close to the marshes, usually near the junction with higher ground. Most were adjacent to marsh creeks. There is a great deal of mineralogical and stylistic overlap between each site, but with care local characteristics can be identified. Modern parish boundaries are used to identify sub-zones of activity within The Thameside zone.



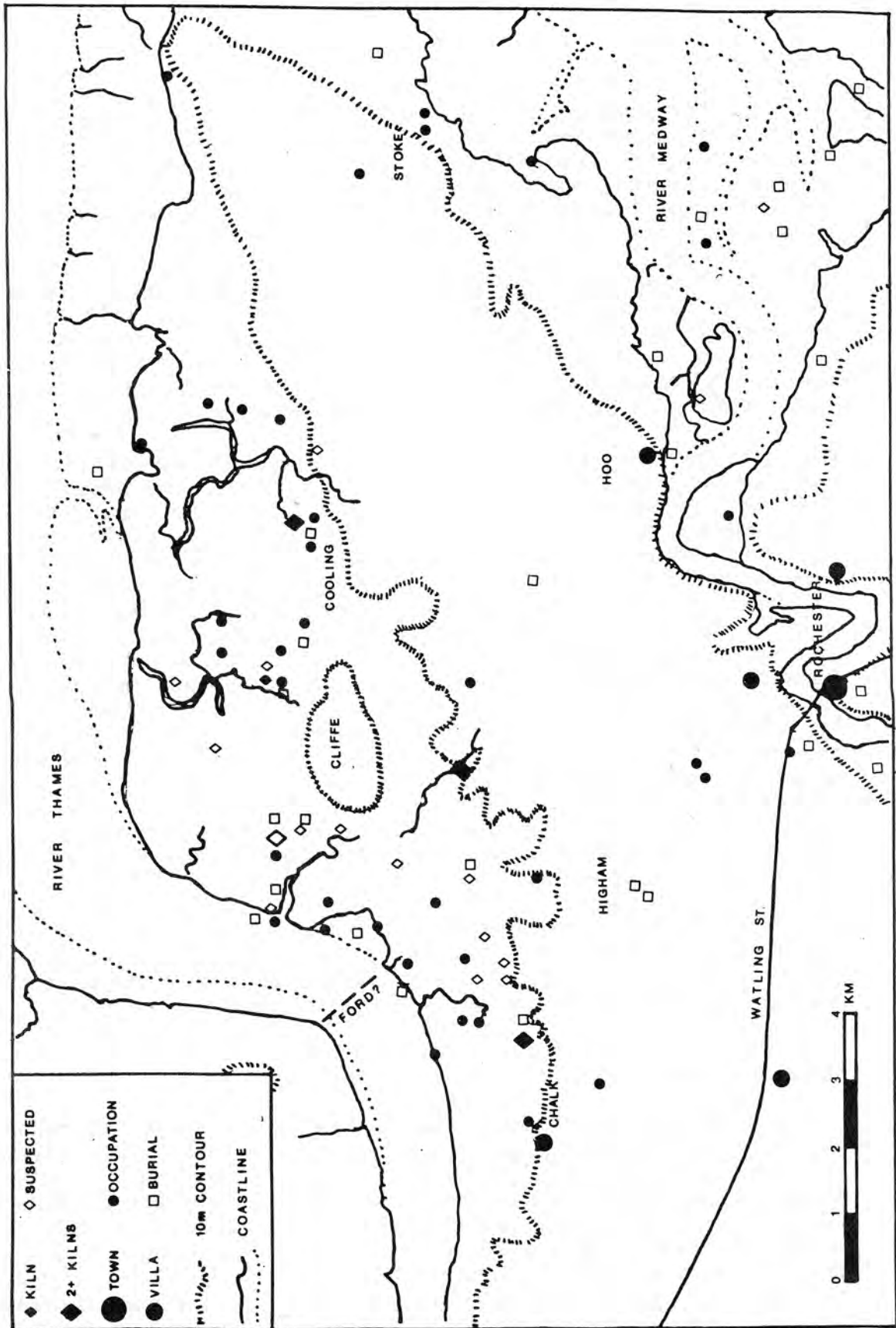


Fig. 8

## Higham

The only modern, published excavation of a kiln site along the south bank of the Thames was conducted by Catherall on the course of a gas pipeline in 1978 (Catherall 1983). Four kilns were excavated and the existence of several more postulated on the basis of a geophysical survey. The site is 60m from an ancient navigable stream and stands at +9m OD. It is unusual in that it sits on sand in a shallow valley, just above the marshes proper. The excavations revealed traces of buildings and items that could conceivably have come from a potters 'tool kit'. Evidence for the re-use and deliberate backfilling of kilns points to a long (if intermittent) occupation of the site. Dating evidence was unfortunately confined to the kiln products themselves but activity was postulated between the mid-second and mid-third centuries AD. The kilns produced fabric Sl/3, SI/3b and Sl/3bs in a range of appropriate forms.

The Thameside kilns were of a more permanent nature than those observed at Upchurch, probably because they date to the second century when the industries were expanding in both scope and volume (Swan 1984, 58). Oakleigh 'Kiln C' was an oval structure with a solid clay floor for its lower chamber dug into a shallow sand scoop. The upper chamber had a permanent clay floor supported by a free standing waisted pedestal. Both the upper chamber and the fire tunnel had a domed clay roof (fig. 7.6). 'Kiln A' was of similar form except that it was built into a pit larger than itself which was then backfilled around it, with a flue subsequently tunnelled in. A second flue above the first has caused some speculation but appears to have been a modification late in the kiln's life when the lower one became blocked (fig. 7.5). 'Kiln D' appears to have been of similar type to 'kiln A', but little of it remained (fig 9.6). 'Kiln B' was thought to be contemporary with 'kiln A' by the excavator, although on the grounds of kiln typology it should perhaps be earlier. It was built on the surface with an integral flue, clay floor, clay dome and a raised central clay bollard (fig. 9.4). It bears much more resemblance to the Chalk kilns than to the rest found at Oakleigh.

Higham parish contains several more suspected sites of which little can be said. These are distributed around the village of Church Street, Hoo Junction (Smith 1877, 115) and around Higham itself (R.F. Hutchings pers. com.). Evidence has been limited to spreads of pottery and pools of nonlocal clay.

## Shorne and Chalk

The kiln site at Queen's Farm straddles the border of the two parishes of Chalk and Shorne. Dragline gravel excavations in 1953 revealed a number of kilns, possibly as many as ten (Allen 1954). Allen only managed to record one in detail before the site was destroyed. Occupation was 0.3m below the modern ground surface at +5m OD. It was close to a stream on a gently rising slope just above the marshland, with a sub-soil of gravel, sand and clay. Activity had taken place at intervals throughout the Roman period, but pottery manufacture seems to have been limited to the early and mid-second century AD. Vessels in the fabric SI/5b and Sl/5bs are in the earliest forms so far identified in that range.

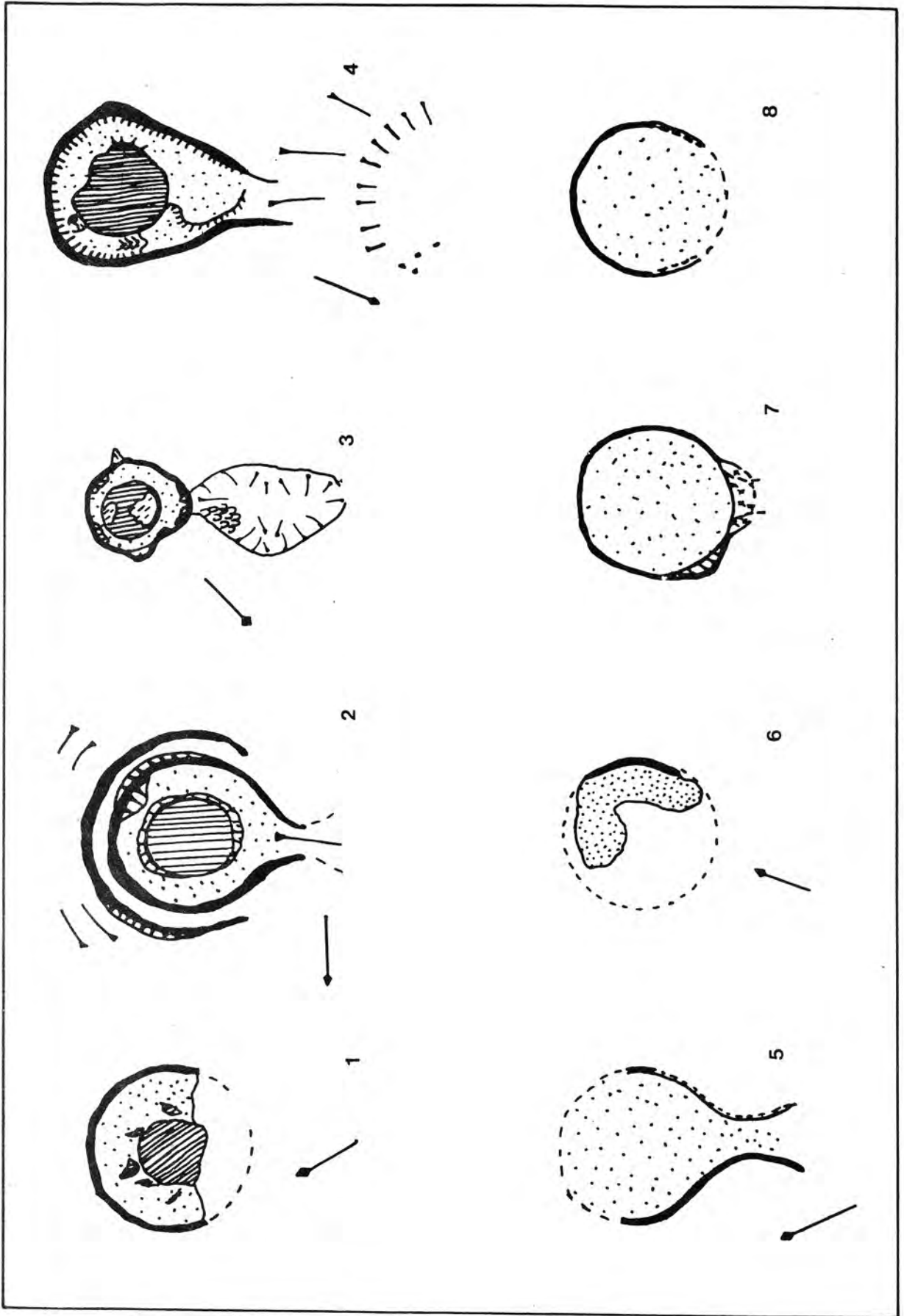


Fig. 9

Chalk 'kiln 1' was clay lined with a large clay pedestal placed centrally (Allen 1954). Four kilns of this type are known in the region. Its origins seem, to be pre-invasion (Swan 1984, 85 and fig XVII with an obscure developmental history. No kiln bars were found with the Chalk structure, nor was there an internal ledge to support them. There was a mention of clay fragments - possibly from the roof - inside the oven (fig. 9.1). Allen succeeded in excavating another kiln, built inside an earlier structure of the same type (Allen 1959) in the same locality. Figure 9.2 is composed from the original photographs using the dimensions in the text of the report.

There have been subsequent indications of further kiln waste in the area (Allen 1970, 185). The present author investigated rumours of additional waste in the area of King's Farm, but field walking yielded nothing of note.

The Arnold Collection at Maidstone Museum comes from an unlocated gravel pit near Shorne. The 'Shorne Gravel Pit' collection possibly relates to nineteenth century activity in the area of Queens Farm. Part of it may have been unearthed during the construction of the railway cutting and marshalling yard around Hoo Junction. The collection seems to be from a graveyard, but the pottery is of a distinctive style of mid-second century date. The main fabric is SI/5b, but there is a clutch of oxidised flagons in an otherwise unknown fabric whose relationship with the Thameside pottery must for the moment remain ambiguous.

Gravel digging around Hoo Junction has produced further evidence for production sites. These lead from Queen's Farm northwards into Higham Marsh. A kiln was reported by Jessup (1928, 106) and other spreads of pottery are known (VCH Kent 1932, 130). More modern investigations along a gas pipeline have confirmed earlier findings by recovering wasters in SI/5b (Thornhill and Payne 1980, 378). The gas pipe led into Shorne Marshes and revealed further evidence in the region of tidal creeks. On the river bank, several burials were discovered during the 1960's around Shorne Beacon (O.A.F. Foster and G. Dockrell pers. com.).

## Cliffe

The parish of Cliffe covers the dog-leg of the Thames between Shorne and Cooling. Bob Hutchings has made extensive observations in the area amounting to over 50 sites, mostly related to farming or salt-boiling, but including several kiln sites.

The Black Shore has long been a noted location for pot hunting and during 1983 was under investigation by at least six different agencies and individuals. It was a foreshore site, not unlike those at Upchurch but suffering from progressive erosion from the waters of the Thames. In 1984, the extensive evidence it yielded of a variety of activities dating to the Roman period and late Iron Age were buried under the concrete of a new sea wall.

Heavy concentrations of fabric H1/4h all along the shore suggest that this was being made nearby, probably in bonfires, in the later first

and early second centuries. Hard patches of clay reported by Hutchings could be the bases of such bonfires, although their antiquity is in doubt (Chris Breen pers com.). The area is the principal find spot for the late first century shell tempered fabric H2/4 and a remarkably similar Mediaeval fabric, so it may be assumed that both of these were also manufactured either along the shore or slightly inland. Early in the Roman period, the area may have also seen a limited amount of fine ware production. The most extensive spreads of pottery are of fabric S1/4 and SI/4b which are often oxidised indicating kiln waste although badly wasted sherds are uncommon. The forms are largely early in date but there is a full range of material including exotic late third and fourth century fine wares. The site is two kilometres from the high ground and no kiln structures are known.

To the west of the Black Shore, across Cliffe Creek in the edge of Higham parish is a site known by various names, which here will be called the Fish Trap site. It too has received much archaeological and treasure-hunting attention over the years. It is at the terminal end of the trackway which leads to the site of the ancient ford of the Thames and several burials have been found on the foreshore (Percy Payne pers. com.). It has yielded a large quantity of S1/4 and SI/4b sherds including many oxidised vessels (Chris Breen pers. com.).

Directly behind the sea wall along the Black Shore, some four square kilometres of marshland has been removed by cement quarrying. The resultant flooded pits are known as Cliffe Lakes. Chance finds by workmen and trial excavations (Chaplin 1961) suggest extensive occupation of this area in the Roman period. Some baulks still remain between pits and the remains of sites can be seen within them. During the late summer of 1984 when the water level was lowest, Percy Payne observed two "kiln floors" below the lakes' surface and recovered several kiln bars of differing sections. This may have been the area from where much of the Black Shore material originated, as it lies rather closer to the high ground near Cliffe village. The size and variety of the kiln bars suggest that Upchurch-type semi-sunken kilns were in use.

The marshes to the north of Cliffe have also been productive of finds. Concentrations of wasters and burned debris in Kingfisher Marsh were reported to Bob Hutchings but never confirmed. A mound of cinders containing pottery is reported from Havenwick. Hutchings conducted a trial trench of a mound in Priory Marsh and discovered pottery with a dump of non-local white clay. He suspects that many similar sites lie dotted around the less developed parts of the marshes.

At the north-east corner of Cliffe village is Wharf Farm, curiously at least two kilometres from where any modern wharf could be sited. A kiln was discovered in the bank of a field drain (Hutchings 1966) but was heavily damaged by rabbits and destroyed by cattle before any proper record could be made. Investigations by the current author have revealed evidence of intensive activity over an area of 30m x 20m south of the kiln at depth of 1-2m below the marsh surface. A water table which varied from 0 to 1m below the surface prevented excavation. An augur survey produced sections similar to those seen in the Cooling salting mound. Sherds in the

grog-tempered fabric G1/4 were found in the survey and one vessel was found complete in a field drain nearby, O.S. records note burials and concentrations of pottery in the area.

### Cooling

Considerable evidence for pottery manufacture has emerged from Cooling parish, although little of it has been published. O.S. records note four 'beehive kilns' in the vicinity of Broomhey Farm. The kiln photographs held in the National Monuments Record and published by Swan (1984, frontispiece) showed one to be circular and clay-lined. It had a solid clay floor - presumably supported by a pedestal and equipped with vent-holes. The flue was destroyed, but appears to have been short with only a shallow stoking area rather than a pit in front of it. The drawing (fig. 7.4) is based on these photographs, using the large vessel 3D2.2 which features in the pictures as a scale. Much of the roof was intact and appears to have had a circular load hole in its apex. It is the largest of the north Kent kilns and has by far the thickest clay walls. It may have been similar in design to kilns "A" and "C" at Oakleigh. The pottery which features in the photographs is held by the Bucknall family at Eastborough Farm and came from nearby graves rather than the kilns themselves (see Appendix I).

The same gas pipeline trench which cut through the Oakleigh Farm kiln site also revealed evidence of manufacture at Broomhey. Wasters and fragments of kiln furniture came from three points along that section of the pipe trench (Thornhill and Payne 1980, 381). Pollard examined this pottery and noted a preponderance of the first century fabric S3/6 and also kiln firebars (pers. com.). A salting mound, completely concealed by more recent silting was revealed in extended excavations by the Lower Medway Archaeological Group (Miles 1973) at Broomhey. The mound was adjacent to a tidal creek and had been subject to erosion from it. It lay under half a kilometre from the high ground and five phases of occupation were identified, two of which were connected with pottery production, although no kilns were found despite searches beyond the limits of the excavation. The first period of manufacture was in the mid- to late-first century, when fabric S3/6 was produced. The second, major production phase was at the end of the second century or early in the third. A breach in one side of the mound was filled with potsherds of fabrics S1/6, S1/6b, S1/6bs and S6/6b. The homogeneity of the forms and fabrics is striking and the pottery appears to be kiln waste. External parallels date the dump to AD 190-230 with associated fine ware being in the range AD 150-220. A few sherds of Oxford pottery occur in the last, post-production phase, The latest known Thameside forms do not occur in the dump. It is debatable whether the last phase at Oakleigh or Broomhey is the latest known Thameside production site. Broomhey is certainly the most easterly: evidence from the marshes around Decoy Farm has indicated only occupation sites (Monaghan 1983b). Beyond this, the marshes end as the high ground swings north to meet the river.

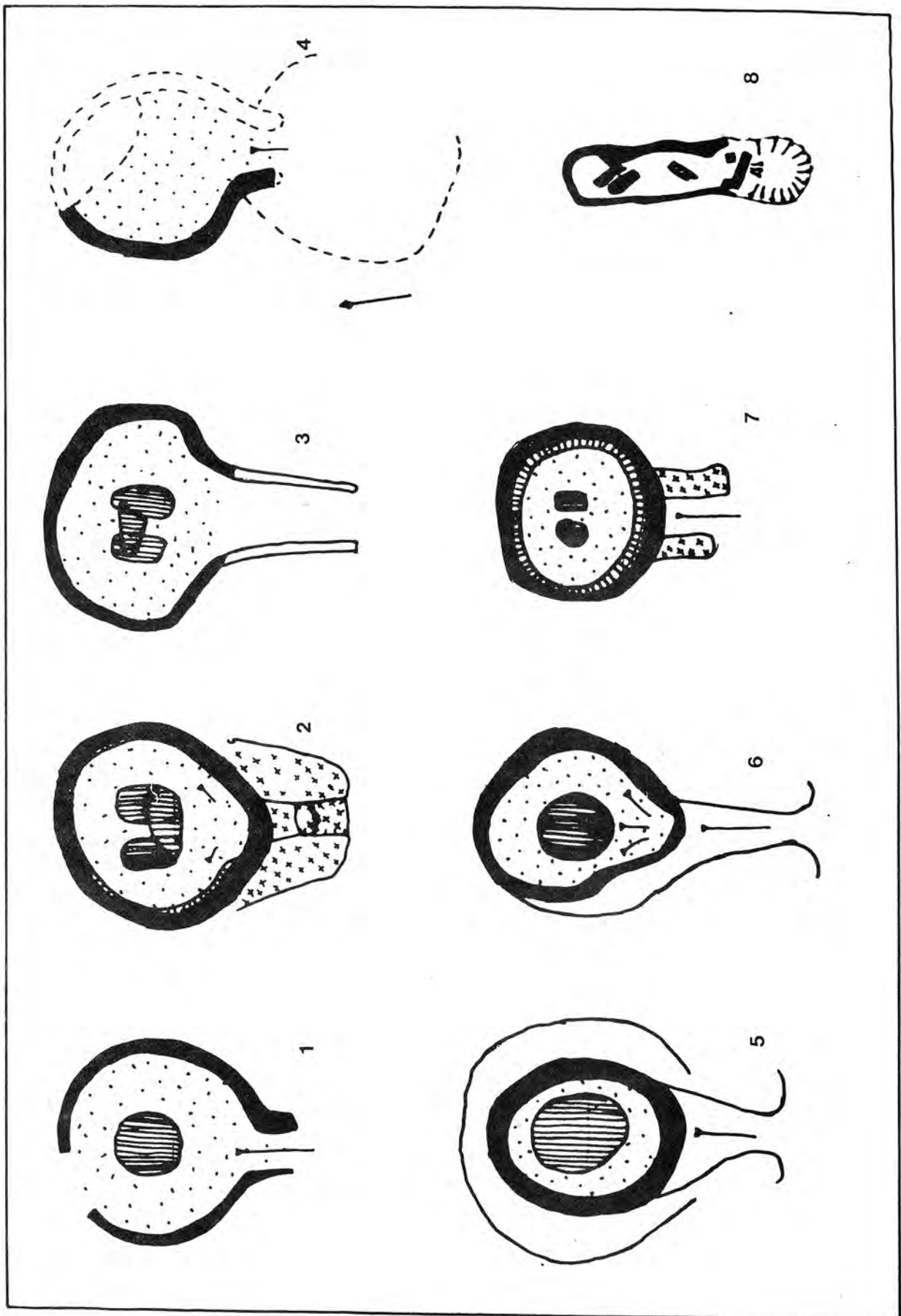


Fig. 10

## WEST KENT

The remainder of northwest Kent contains several unrelated kiln sites which are best briefly described in order to separate them from the industry under study. A dump of kiln debris at Eccles (Detsicas 1977a and 1981) indicated short-lived production of pottery of the Claudio-Neronian period. The forms are chiefly flagons of continental form. The fabric is distinct from the rest in the study, due to Gault clay being the raw material. Detsicas concluded that the site was an attempt to capitalise on military demand following the invasion, probably using immigrant craftsmen. A similar circumstance may be behind the flagon production at Otford during the same period (Pearce 1930).

A kiln-like structure at Joydens Wood (Tester and Caiger 1954) was dug into a shallow pit and had a level fired clay floor and a firing trench. The surviving wall was vertical. There was no evidence of an internal ledge, raised floor, pedestal or kiln bars (fig. 9.5). The excavators and others (Detsicas 1977b, 239) were never happy about it being a kiln, considering a corn-drier equally credible. Monaghan (1983, 33) illustrated that a handful of sherds were chemically inhomogeneous. A short while afterwards, the Dartford District Archaeological Group performed a general fabric survey of the sherds recovered and concluded that the range of variation was too great to represent a kiln assemblage (C. Breen pers. com.). Joydens Wood, is not therefore a kiln site. Although Williams (1977) found 'Joydens Wood' pottery on the northern frontier his analysis presumably detected pottery similar to that *found* at, rather than produced at Joydens Wood.

The excavation of a Romano-British site at Greenhithe (Detsicas 1966) did not reveal a kiln. The pottery recovered did however include a distinctive local variation on the standard Thameside products. The forms illustrated in the paper represent an otherwise unrecognised small industry. It should be regarded as a localised offshoot of the main Thameside potteries, producing inferior versions of popular forms for local consumption. The actual kiln site may lie on the marshland that is a kilometre north of the site.

As archaeological research progresses, it will probably become the norm to find a few kilns associated with any substantial Romano-British settlement at some part of its history. This explains the common discovery of single kilns on otherwise non-industrial sites. Springhead is no exception and there have been published claims for six kilns at the religious complex there (Jessup 1928, 337. Penn 1965). Their products are not well described, 'Upchurch Ware' is the definitive term applied to them. The structure which Jessup photographed at Springhead was circular and had a fired clay floor. There was no evidence of kiln furniture (fig. 9.8). If the structures were kilns rather than ovens, it is probable that they were producing pottery equivalent to the Greenhithe type: local copies of real Upchurch Ware and Thameside coarse wares. In the absence of illustration and convincing wasters, there is a possibility that some or all of the structures were in fact ovens. Sid Harker showed the author a



waster of form 2D that was recovered from a pit at Springhead during 1984.

A kiln is claimed on Galley Hill, Swanscombe (Youens 1905a). Its situation - on gravel - is not advantageous to pottery production. The structure is very similar to that at Springhead, with a suggestion of a firing trench at one end. Again no kiln furniture was found (fig. 9.7) and there was no substantial amount of pottery related with the feature. The surviving photograph of the structure could easily be that of an oven.

A pair of structures was discovered during the excavation of Ash Villa I, of late first or early second century date. One is probably an oven, the other is a small kiln (Connell and Monaghan 1987). It had a clay pedestal of the bollard type, but was modified during its lifetime by the addition of pieces of a ragstone kickwheel to double its height. When this took place, a ledge was formed by embedding pieces of tile in the kiln wall. These would have supported other pieces of tile which served as a temporary kiln floor. No other kiln furniture was associated with the structure. It therefore is the only local example of a kiln being converted from one type to another, presumably on the grounds of efficiency. Its fire tunnel was at some time deliberately narrowed by a dump of flints which could have served to support a temporary roof of tiles (fig. 9.3). The structure had been relegated to a ditch and not allowed to intrude on the villa's main activity - agriculture. The pottery which was recovered is analogous to grey wares being produced elsewhere in north Kent at that date; production is therefore on a similar level to that at Mucking.

The distinctive grog-tempered pottery first characterised by Ward-Perkins (1944, 141) and known as 'Patch Grove Ware' has not yet been traced to any particular source. Local archaeological groups have identified several distinctive fabrics (C. Breen pers. com.) and it is likely that this type of pottery was made at several locations on the Kent-Surrey borders in the first and second centuries AD.

#### THAMESIDE ESSEX

There is considerable evidence for Roman ceramic manufacture along the Thameside strip of Essex. This points to an 'industry' of a different nature to the one which faced it across the Thames. Most production appears to have taken place on the gravel terraces overlooking the marshland and was largely linked to agricultural establishments rather than being in specialised industrial centres. All the evidence points to strictly 'local' production on a widespread and consistent level. The pottery bears physical resemblance to Kentish forms but there is a significant proportion of distinctly Essex types which are not made across the river. A lesser number of Essex forms are made on the Kentish bank. The fabrics are macroscopically distinct. The zone may be regarded as an interface between Kent and inland Essex.

The six kilns at the multi-period site at Mucking were similar in size and sophistication to those across the Thames (Jones and Rodwell 1973). They were semi-sunken (fig. 10, 1-3 and 5-7) and employed either a single or twin solid pedestal, although the nature of the oven floor in

each of the six is uncertain. Two had kiln bars in association, so it is probable that these, being 'portable' were removed from the other kilns when they fell into disuse. The kilns are relegated to the edges of field enclosures so as not to disturb agricultural activity. Whether they were built by some potter on a peripatetic cycle is uncertain. The status of several suspected Iron Age 'proto kilns' is still in doubt (fig. 10.8).

Excavations at Gun Hill, Tilbury (Drury and Rodwell 1973) revealed three surface-built kilns which seem to fit within the la Tene III typology of kiln development (fig. 10.4). Firebars suggest that a temporary floor was employed although the excavators also mention the discovery of pieces of clay kiln-floor which would indicate that more permanent structures existed in the vicinity. The site, its location and the late first century pottery found are all reminiscent of Mucking and pottery production probably took place on a similar basis. Three phases of activity at Grays (Rodwell 1971) indicate manufacture from the mid-second to the mid-third centuries AD. A possible kiln of third or fourth century date is also reported to have been found near Chadwell St. Mary (RCHM 1923, 24). Two kilns are recorded as being found near Shoebury with the possibility of two further structures being associated with one of them (RCHM 1923, 143. VCH 1963, 178). One appears to have been sunken or semi-sunken with a suspended clay floor on a solid pedestal. Native style pottery or 'Upchurch Ware' (sic) is thought to have been produced (RCHM 1923, xxxviii). There was also a kiln near Wakering, about which little is known, (Draper 1896). Excavations by Chaplin and Brooks (1966) led to suggestions that an oven or kiln at South Ockenden was producing pottery in the style of that found at Mucking. Pottery production at Billericay is indicated by spreads of ash and two possible kilns (VCH 1963, 49). A further kiln of the late second century with pottery again described as being similar to Mucking types was reported more recently (Britannia IX, 1978, 449). The Orsett 'Cock' excavation (Rodwell 1974) revealed an agricultural setting for rural pottery production as observed at Mucking, again with similar pottery. In addition to these known sites there are several more which are certainly unidentified as yet. A search of local museums reveals several distinctive fabrics native to south Essex for which no source has yet been discovered.